New Jersey ACCUTEST LABORATORIES

07/30/14

Technical Report for

Stantec Consulting Services Inc.

Sunoco - Marcus Hook Facility, PA

Accutest Job Number: JB50132

Sampling Date: 10/14/13

Report to:

Stantec

Lisa.Votta@stantec.com

ATTN: Lisa Votta

Total number of pages in report: **32**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Marie Meidhof 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, OH VAP (CL0056), PA, RI, SC, TN, VA, WV, DoD ELAP (L-A-B L2248)

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Sample Summary

Stantec Consulting Services Inc.

Sunoco - Marcus Hook Facility, PA

Job No: JB50132

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JB50132-1	10/14/13	10:36	CC	10/14/13	AQ	Ground Water	MW402
JB50132-1F	10/14/13	10:36	CC	10/14/13	AQ	Groundwater Filtered	MW402
JB50132-2	10/14/13	09:24	CC	10/14/13	AQ	Ground Water	MW435
JB50132-2F	10/14/13	09:24	CC	10/14/13	AQ	Groundwater Filtered	MW435
JB50132-3	10/14/13	08:16	CC	10/14/13	AQ	Ground Water	MW482
JB50132-3F	10/14/13	08:16	CC	10/14/13	AQ	Groundwater Filtered	MW482
JB50132-4	10/14/13	08:46	CC	10/14/13	AQ	Ground Water	MW454
JB50132-4F	10/14/13	08:46	CC	10/14/13	AQ	Groundwater Filtered	MW454
JB50132-5	10/14/13	10:36	CC	10/14/13	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Stantec Consulting Services Inc.	**Job No**	JB50132
Site:	Sunoco - Marcus Hook Facility, PA	**Report Date**	11/6/2013 9:14:45 AM

On 10/14/2013, 4 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories at a temperature of 2.2 C. Samples were intact and chemically preserved, unless noted below. An Accutest Job Number of JB50132 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** V2E4328

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB50132-1MS, JB50132-1MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270D

Matrix: AQ **Batch ID:** OP70016

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB50711-2MS, JB50711-2MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270D BY SIM

Matrix: AQ **Batch ID:** OP70016A

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB50711-2MS, JB50711-2MSD were used as the QC samples indicated.
- RPD(s) for MS/MSD for Benzo(a)anthracene, Benzo(a)pyrene, Dibenzo(a,h)anthracene are outside control limits. Outside of in house control limits.

Volatiles by GC By Method SW846-8011

Matrix: AQ **Batch ID:** OP69886

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB50133-4MS, JB50133-4MSD were used as the QC samples indicated.

Metals By Method SW846 6010C

Matrix: AQ **Batch ID:** MP75363

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB49470-1MS, JB49470-1MSD, JB49470-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Cobalt, Nickel, Vanadium are outside control limits. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover

Summary of Hits

Job Number: JB50132
Account: Stantec Consulting Services Inc.
Project: Sunoco - Marcus Hook Facility, PA
Collected: 10/14/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JB50132-1	**MW402**					
Anthracene		0.602	0.10	0.020	ug/l	SW846 8270D BY SIM
JB50132-1F	**MW402**					
Cobalt		0.90 B	50	0.48	ug/l	SW846 6010C
Vanadium		1.6 B	50	0.72	ug/l	SW846 6010C
JB50132-2	**MW435**					
Benzene		21.4	1.0	0.28	ug/l	SW846 8260B
Ethylbenzene		7.5	1.0	0.21	ug/l	SW846 8260B
Xylene (total)		2.7	1.0	0.19	ug/l	SW846 8260B
Methyl Tert Butyl Ether		12.1	1.0	0.29	ug/l	SW846 8260B
Cyclohexane		9.2	5.0	0.18	ug/l	SW846 8260B
Isopropylbenzene		0.85 J	2.0	0.22	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		9.8	2.0	0.23	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		4.3	2.0	0.43	ug/l	SW846 8260B
2,4-Dimethylphenol		2.3 J	5.0	1.5	ug/l	SW846 8270D
bis(2-Ethylhexyl)phthalate		2.0	2.0	0.59	ug/l	SW846 8270D
2-Methylnaphthalene		1.2	1.0	0.38	ug/l	SW846 8270D
Acenaphthene		1.05	0.10	0.020	ug/l	SW846 8270D BY SIM
Anthracene		0.679	0.10	0.020	ug/l	SW846 8270D BY SIM
Benzo(a)anthracene		0.344	0.10	0.012	ug/l	SW846 8270D BY SIM
Chrysene		0.414	0.10	0.012	ug/l	SW846 8270D BY SIM
Fluoranthene		0.283	0.10	0.013	ug/l	SW846 8270D BY SIM
Fluorene		1.45	0.10	0.017	ug/l	SW846 8270D BY SIM
Naphthalene		1.50	0.10	0.036	ug/l	SW846 8270D BY SIM
Phenanthrene		0.846	0.10	0.021	ug/l	SW846 8270D BY SIM
Pyrene		1.58	0.10	0.015	ug/l	SW846 8270D BY SIM
JB50132-2F	**MW435**					
Cobalt		1.6 B	50	0.48	ug/l	SW846 6010C
Nickel		1.7 B	10	1.6	ug/l	SW846 6010C
JB50132-3	**MW482**					
sec-Butylbenzene		5.6	5.0	0.48	ug/l	SW846 8260B
tert-Butylbenzene		3.9 J	5.0	0.25	ug/l	SW846 8260B
Cyclohexane		1.1 J	5.0	0.18	ug/l	SW846 8260B
Isopropylbenzene		13.5	2.0	0.22	ug/l	SW846 8260B
bis(2-Ethylhexyl)phthalate		4.6	2.0	0.59	ug/l	SW846 8270D
Acenaphthene		1.87	0.10	0.020	ug/l	SW846 8270D BY SIM

Summary of Hits

Job Number: JB50132
Account: Stantec Consulting Services Inc.
Project: Sunoco - Marcus Hook Facility, PA
Collected: 10/14/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Anthracene		0.242	0.10	0.020	ug/l	SW846 8270D BY SIM
Fluorene		2.52	0.10	0.017	ug/l	SW846 8270D BY SIM
Phenanthrene		1.01	0.10	0.021	ug/l	SW846 8270D BY SIM
Pyrene		0.485	0.10	0.015	ug/l	SW846 8270D BY SIM
JB50132-3F	**MW482**					
Cobalt		1.5 B	50	0.48	ug/l	SW846 6010C
Nickel		3.0 B	10	1.6	ug/l	SW846 6010C
Zinc		13.0 B	20	4.4	ug/l	SW846 6010C
JB50132-4	**MW454**					
Methyl Tert Butyl Ether		2.1	1.0	0.29	ug/l	SW846 8260B
sec-Butylbenzene		0.67 J	5.0	0.48	ug/l	SW846 8260B
tert-Butylbenzene		0.76 J	5.0	0.25	ug/l	SW846 8260B
Cyclohexane		6.0	5.0	0.18	ug/l	SW846 8260B
Isopropylbenzene		3.0	2.0	0.22	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		2.2	2.0	0.23	ug/l	SW846 8260B
bis(2-Ethylhexyl)phthalate		1.3 J	2.0	0.59	ug/l	SW846 8270D
Acenaphthene		1.69	0.10	0.020	ug/l	SW846 8270D BY SIM
Anthracene		0.473	0.10	0.020	ug/l	SW846 8270D BY SIM
Fluoranthene		0.154	0.10	0.013	ug/l	SW846 8270D BY SIM
Fluorene		2.70	0.10	0.017	ug/l	SW846 8270D BY SIM
Phenanthrene		1.38	0.10	0.021	ug/l	SW846 8270D BY SIM
Pyrene		0.307	0.10	0.015	ug/l	SW846 8270D BY SIM
JB50132-4F	**MW454**					
Cobalt		1.2 B	50	0.48	ug/l	SW846 6010C
Nickel		2.4 B	10	1.6	ug/l	SW846 6010C
Zinc		4.4 B	20	4.4	ug/l	SW846 6010C
JB50132-5	**TRIP BLANK**					

No hits reported in this sample.

New Jersey ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW402		
Lab Sample ID:	JB50132-1	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E95910.D	1	10/16/13	TYG	n/a	n/a	V2E4328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.28	ug/l	
108-88-3	Toluene	ND	1.0	0.44	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.19	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.29	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.48	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.25	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.18	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.22	ug/l	
110-54-3	Hexane	ND	5.0	1.1	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	0.22	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.23	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		79-117%
17060-07-0	1,2-Dichloroethane-D4	102%		72-123%
2037-26-5	Toluene-D8	99%		82-118%
460-00-4	4-Bromofluorobenzene	93%		75-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW402		
Lab Sample ID:	JB50132-1	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R103569.D	1	10/22/13	EA	10/21/13	OP70016	ER4131
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.5	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	17	ug/l	
95-48-7	2-Methylphenol	ND	2.0	1.0	ug/l	
	3&4-Methylphenol	ND	2.0	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	10	5.2	ug/l	
108-95-2	Phenol	ND	2.0	1.3	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.56	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.33	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.59	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.38	ug/l	
110-86-1	Pyridine	ND	2.0	0.32	ug/l	
91-22-5	Quinoline	ND	5.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	54%		10-110%
4165-62-2	Phenol-d5	35%		10-110%
118-79-6	2,4,6-Tribromophenol	72%		29-139%
4165-60-0	Nitrobenzene-d5	88%		28-131%
321-60-8	2-Fluorobiphenyl	81%		30-121%
1718-51-0	Terphenyl-d14	79%		16-147%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW402		
Lab Sample ID:	JB50132-1	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M41649.D	1	10/28/13	NAP	10/21/13	OP70016A	E3M1882
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.020	ug/l	
120-12-7	Anthracene	0.602	0.10	0.020	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.012	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.012	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.010	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.016	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.015	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.017	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.013	ug/l	
86-73-7	Fluorene	ND	0.10	0.017	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.014	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.10	0.021	ug/l	
129-00-0	Pyrene	ND	0.10	0.015	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%		23-131%
321-60-8	2-Fluorobiphenyl	74%		24-120%
1718-51-0	Terphenyl-d14	66%		10-125%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW402
Lab Sample ID: JB50132-1
Matrix: AQ - Ground Water
Method: SW846-8011 SW846 8011
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 10/14/13
Date Received: 10/14/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	WW121010.D	1	10/16/13	GAD	10/16/13	OP69886	GWW4304
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	109%		38-167%
3017-95-6	2-Bromo-1-chloropropane	130%		38-167%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW402
Lab Sample ID: JB50132-1F
Matrix: AQ - Groundwater Filtered
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 10/14/13
Date Received: 10/14/13
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cobalt	0.90 B	50	0.48	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Lead	2.4 U	3.0	2.4	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Nickel	1.6 U	10	1.6	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Vanadium	1.6 B	50	0.72	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Zinc	4.4 U	20	4.4	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA32472
(2) Prep QC Batch: MP75363

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW435		
Lab Sample ID:	JB50132-2	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E95911.D	1	10/16/13	TYG	n/a	n/a	V2E4328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	21.4	1.0	0.28	ug/l	
108-88-3	Toluene	ND	1.0	0.44	ug/l	
100-41-4	Ethylbenzene	7.5	1.0	0.21	ug/l	
1330-20-7	Xylene (total)	2.7	1.0	0.19	ug/l	
1634-04-4	Methyl Tert Butyl Ether	12.1	1.0	0.29	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.48	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.25	ug/l	
110-82-7	Cyclohexane	9.2	5.0	0.18	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.22	ug/l	
110-54-3	Hexane	ND	5.0	1.1	ug/l	
98-82-8	Isopropylbenzene	0.85	2.0	0.22	ug/l	J
95-63-6	1,2,4-Trimethylbenzene	9.8	2.0	0.23	ug/l	
108-67-8	1,3,5-Trimethylbenzene	4.3	2.0	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		79-117%
17060-07-0	1,2-Dichloroethane-D4	105%		72-123%
2037-26-5	Toluene-D8	100%		82-118%
460-00-4	4-Bromofluorobenzene	93%		75-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW435
Lab Sample ID: JB50132-2
Matrix: AQ - Ground Water
Method: SW846 8270D SW846 3510C
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 10/14/13
Date Received: 10/14/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R103570.D	1	10/22/13	EA	10/21/13	OP70016	ER4131
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	2.3	5.0	1.5	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	20	17	ug/l	
95-48-7	2-Methylphenol	ND	2.0	1.0	ug/l	
	3&4-Methylphenol	ND	2.0	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	10	5.2	ug/l	
108-95-2	Phenol	ND	2.0	1.3	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.56	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.33	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.0	2.0	0.59	ug/l	
91-57-6	2-Methylnaphthalene	1.2	1.0	0.38	ug/l	
110-86-1	Pyridine	ND	2.0	0.32	ug/l	
91-22-5	Quinoline	ND	5.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	48%		10-110%
4165-62-2	Phenol-d5	35%		10-110%
118-79-6	2,4,6-Tribromophenol	67%		29-139%
4165-60-0	Nitrobenzene-d5	85%		28-131%
321-60-8	2-Fluorobiphenyl	72%		30-121%
1718-51-0	Terphenyl-d14	46%		16-147%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW435
Lab Sample ID: JB50132-2
Matrix: AQ - Ground Water
Method: SW846 8270D BY SIM SW846 3510C
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 10/14/13
Date Received: 10/14/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M41700.D	1	10/29/13	CH	10/21/13	OP70016A	E3M1884
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	1.05	0.10	0.020	ug/l	
120-12-7	Anthracene	0.679	0.10	0.020	ug/l	
56-55-3	Benzo(a)anthracene	0.344	0.10	0.012	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.012	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.010	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.016	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.015	ug/l	
218-01-9	Chrysene	0.414	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.017	ug/l	
206-44-0	Fluoranthene	0.283	0.10	0.013	ug/l	
86-73-7	Fluorene	1.45	0.10	0.017	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.014	ug/l	
91-20-3	Naphthalene	1.50	0.10	0.036	ug/l	
85-01-8	Phenanthrene	0.846	0.10	0.021	ug/l	
129-00-0	Pyrene	1.58	0.10	0.015	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		23-131%
321-60-8	2-Fluorobiphenyl	56%		24-120%
1718-51-0	Terphenyl-d14	36%		10-125%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW435		
Lab Sample ID:	JB50132-2	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	WW121030.D	1	10/17/13	GAD	10/16/13	OP69886	GWW4305
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	114%		38-167%
3017-95-6	2-Bromo-1-chloropropane	123%		38-167%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW435
Lab Sample ID: JB50132-2F
Matrix: AQ - Groundwater Filtered
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 10/14/13
Date Received: 10/14/13
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cobalt	1.6 B	50	0.48	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Lead	2.4 U	3.0	2.4	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Nickel	1.7 B	10	1.6	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Vanadium	0.72 U	50	0.72	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Zinc	4.4 U	20	4.4	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA32472
(2) Prep QC Batch: MP75363

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW482		
Lab Sample ID:	JB50132-3	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E95912.D	1	10/16/13	TYG	n/a	n/a	V2E4328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.28	ug/l	
108-88-3	Toluene	ND	1.0	0.44	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.19	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.29	ug/l	
135-98-8	sec-Butylbenzene	5.6	5.0	0.48	ug/l	
98-06-6	tert-Butylbenzene	3.9	5.0	0.25	ug/l	J
110-82-7	Cyclohexane	1.1	5.0	0.18	ug/l	J
107-06-2	1,2-Dichloroethane	ND	1.0	0.22	ug/l	
110-54-3	Hexane	ND	5.0	1.1	ug/l	
98-82-8	Isopropylbenzene	13.5	2.0	0.22	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.23	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		79-117%
17060-07-0	1,2-Dichloroethane-D4	104%		72-123%
2037-26-5	Toluene-D8	104%		82-118%
460-00-4	4-Bromofluorobenzene	91%		75-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW482		
Lab Sample ID:	JB50132-3	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R103571.D	1	10/22/13	EA	10/21/13	OP70016	ER4131
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.5	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	17	ug/l	
95-48-7	2-Methylphenol	ND	2.0	1.0	ug/l	
	3&4-Methylphenol	ND	2.0	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	10	5.2	ug/l	
108-95-2	Phenol	ND	2.0	1.3	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.56	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.33	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	4.6	2.0	0.59	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.38	ug/l	
110-86-1	Pyridine	ND	2.0	0.32	ug/l	
91-22-5	Quinoline	ND	5.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	49%		10-110%
4165-62-2	Phenol-d5	33%		10-110%
118-79-6	2,4,6-Tribromophenol	72%		29-139%
4165-60-0	Nitrobenzene-d5	83%		28-131%
321-60-8	2-Fluorobiphenyl	73%		30-121%
1718-51-0	Terphenyl-d14	71%		16-147%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW482
Lab Sample ID: JB50132-3
Matrix: AQ - Ground Water
Method: SW846 8270D BY SIM SW846 3510C
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 10/14/13
Date Received: 10/14/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M41650.D	1	10/28/13	NAP	10/21/13	OP70016A	E3M1882
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	1.87	0.10	0.020	ug/l	
120-12-7	Anthracene	0.242	0.10	0.020	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.012	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.012	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.010	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.016	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.015	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.017	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.013	ug/l	
86-73-7	Fluorene	2.52	0.10	0.017	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.014	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	1.01	0.10	0.021	ug/l	
129-00-0	Pyrene	0.485	0.10	0.015	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%		23-131%
321-60-8	2-Fluorobiphenyl	65%		24-120%
1718-51-0	Terphenyl-d14	62%		10-125%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW482		
Lab Sample ID:	JB50132-3	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	WW121031.D	1	10/17/13	GAD	10/16/13	OP69886	GWW4305
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	112%		38-167%
3017-95-6	2-Bromo-1-chloropropane	135%		38-167%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW482
Lab Sample ID: JB50132-3F
Matrix: AQ - Groundwater Filtered
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 10/14/13
Date Received: 10/14/13
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cobalt	1.5 B	50	0.48	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Lead	2.4 U	3.0	2.4	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Nickel	3.0 B	10	1.6	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Vanadium	0.72 U	50	0.72	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Zinc	13.0 B	20	4.4	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA32472
(2) Prep QC Batch: MP75363

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW454		
Lab Sample ID:	JB50132-4	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E95917.D	1	10/16/13	TYG	n/a	n/a	V2E4328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.28	ug/l	
108-88-3	Toluene	ND	1.0	0.44	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.19	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.1	1.0	0.29	ug/l	
135-98-8	sec-Butylbenzene	0.67	5.0	0.48	ug/l	J
98-06-6	tert-Butylbenzene	0.76	5.0	0.25	ug/l	J
110-82-7	Cyclohexane	6.0	5.0	0.18	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.22	ug/l	
110-54-3	Hexane	ND	5.0	1.1	ug/l	
98-82-8	Isopropylbenzene	3.0	2.0	0.22	ug/l	
95-63-6	1,2,4-Trimethylbenzene	2.2	2.0	0.23	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		79-117%
17060-07-0	1,2-Dichloroethane-D4	102%		72-123%
2037-26-5	Toluene-D8	102%		82-118%
460-00-4	4-Bromofluorobenzene	95%		75-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW454		
Lab Sample ID:	JB50132-4	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R103572.D	1	10/22/13	EA	10/21/13	OP70016	ER4131
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.5	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	17	ug/l	
95-48-7	2-Methylphenol	ND	2.0	1.0	ug/l	
	3&4-Methylphenol	ND	2.0	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	10	5.2	ug/l	
108-95-2	Phenol	ND	2.0	1.3	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.56	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.33	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	1.3	2.0	0.59	ug/l	J
91-57-6	2-Methylnaphthalene	ND	1.0	0.38	ug/l	
110-86-1	Pyridine	ND	2.0	0.32	ug/l	
91-22-5	Quinoline	ND	5.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	58%		10-110%
4165-62-2	Phenol-d5	40%		10-110%
118-79-6	2,4,6-Tribromophenol	76%		29-139%
4165-60-0	Nitrobenzene-d5	91%		28-131%
321-60-8	2-Fluorobiphenyl	83%		30-121%
1718-51-0	Terphenyl-d14	85%		16-147%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW454		
Lab Sample ID:	JB50132-4	**Date Sampled:**	10/14/13
Matrix:	AQ - Ground Water	**Date Received:**	10/14/13
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M41651.D	1	10/28/13	NAP	10/21/13	OP70016A	E3M1882
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	1.69	0.10	0.020	ug/l	
120-12-7	Anthracene	0.473	0.10	0.020	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.012	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.012	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.010	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.016	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.015	ug/l	
218-01-9	Chrysene	ND	0.10	0.012	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.017	ug/l	
206-44-0	Fluoranthene	0.154	0.10	0.013	ug/l	
86-73-7	Fluorene	2.70	0.10	0.017	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.014	ug/l	
91-20-3	Naphthalene	ND	0.10	0.036	ug/l	
85-01-8	Phenanthrene	1.38	0.10	0.021	ug/l	
129-00-0	Pyrene	0.307	0.10	0.015	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%		23-131%
321-60-8	2-Fluorobiphenyl	65%		24-120%
1718-51-0	Terphenyl-d14	71%		10-125%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW454
Lab Sample ID: JB50132-4
Matrix: AQ - Ground Water
Method: SW846-8011 SW846 8011
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 10/14/13
Date Received: 10/14/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	WW121032.D	1	10/17/13	GAD	10/16/13	OP69886	GWW4305
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.011	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	111%		38-167%
3017-95-6	2-Bromo-1-chloropropane	153%		38-167%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW454
Lab Sample ID: JB50132-4F
Matrix: AQ - Groundwater Filtered
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 10/14/13
Date Received: 10/14/13
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cobalt	1.2 B	50	0.48	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Lead	2.4 U	3.0	2.4	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Nickel	2.4 B	10	1.6	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Vanadium	0.72 U	50	0.72	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]
Zinc	4.4 B	20	4.4	ug/l	1	10/16/13	10/25/13	KK	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA32472
(2) Prep QC Batch: MP75363

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JB50132-5	**Date Sampled:**	10/14/13
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/14/13
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E95916.D	1	10/16/13	TYG	n/a	n/a	V2E4328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.28	ug/l	
108-88-3	Toluene	ND	1.0	0.44	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.19	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.29	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.48	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.25	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.18	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.22	ug/l	
110-54-3	Hexane	ND	5.0	1.1	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	0.22	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.23	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.43	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		79-117%
17060-07-0	1,2-Dichloroethane-D4	101%		72-123%
2037-26-5	Toluene-D8	102%		82-118%
460-00-4	4-Bromofluorobenzene	93%		75-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

New Jersey ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES

GW
WB

CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

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FED-EX Tracking # | Bottle Order Control #

Accutest Quote # | Accutest Job # JB50132

Client / Reporting Information

Company Name: Stantec
Street Address: 1060 Andrew Dr. Suite 140
City: West Chester State: PA Zip: 19380
Project Contact: Stephanie Andrews E-mail: Stephanie.andrews@Stantec.com
Phone #: 610 840 2563 Fax #:
Sampler(s) Name(s): C. Correll / J. Richter Phone #:

Project Information

Project Name: Marcus Hook Industrial Complex
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	VOC 8260 **	EDB 8011	Metals 6010/6020 (Lab Filter)	SVOC 8270 **	LAB USE ONLY
1F	MW402		10-14-13	1030	CC	GW	8	X				X				X	X	X	X	DSO
2F	MW435			0934	CC		8	X				X				X	X	X	X	C10
3F	MW482			0816	CC		8	X				X				X	X	X	X	2281
4F	MW454		↓	0846	CC	↓	8	X				X				X	X	X	X	
5	Trip Blank						2									X				

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [x] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Rec'd at Exton Service Center 10/14/13 1350

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other REDI2 **

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

metals: Cobalt, Lead, Nickel, Vanadium & Zinc.
VOC+SVOC Analysis list Attached**

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		10-14-13/1133	1	2	10/14/13 1320	2
3		10/14/13 1540	3	4	Date Time:	4
5	Relinquished by:	Date Time:	5	Custody Seal #	Intact / Not intact	Preserved where applicable / On Ice ✓

Cooler Temp. 2.2 C-IF 2.1 C-16

2A

5.1 5

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JB50132 **Client:** **Project:**

Date / Time Received: 10/14/2013 **Delivery Method:** **Airbill #'s:**

Cooler Temps (Initial/Adjusted): #1: (2.2/2.2); #2: (2.1/2.1); 0

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservatio	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com

JB50132: Chain of Custody
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